



Classification: Associate Electrical Engineer	Position No. 5400-3603-
CBID: R09	Office: Energy Systems Research
Date Prepared: December, 2009	Division: Energy Research and Development
KEY: (E) IS ESSENTIAL, (M) IS MARGINAL	

Under the direction and supervision of the Energy Commission Supervisor II (TED), the incumbent serves as part of an interdisciplinary team to plan and implement the Public Interest Energy Research (PIER) Program. The goal of the PIER Program is to conduct energy research, development and demonstration (RD&D) to advance science and technologies not adequately provided by the regulated and competitive markets. The incumbent will complete technical reviews and assessments of research, development, and demonstration projects associated with the implementation of smart grid projects and support research activities of the PIER Energy Systems Integration Research Team. The incumbent is responsible for planning, organizing and making technical decisions on PIER-funded energy RD&D efforts related to the electrical design and specifications for smart grid deployment and distributed energy resources (DER), including distributed generation (DG), advanced power electronics technology, grid power flow analysis, and application of advanced communications and control systems to support micro-grids, renewable technology integration and electricity energy storage. The research focus will be on technology and engineering innovations integrating electrical energy technologies into the electric utility grid system. Additional engineering and planning work will be conducted in distribution systems and communication and controls strategies.

WORKING CONDITIONS. The work is performed in an indoor office and meeting room setting involving sitting, standing, and walking. The candidate must work well with people inside and outside the Energy Commission, including members of the general public. Travel is required to attend workshops, hearings and meetings. Additional hours beyond an eight-hour workday or forty-hour workweek may be required. While performing the duties described below, the incumbent will be required to work alone and/or in a team environment, using a personal computer and appropriate Energy Commission software such as word processing, electronic mail and Internet; participate in and lead meetings with other staff and with other agencies.

DUTIES AND RESPONSIBILITIES:

50% Provide independent technical and engineering assessments and reviews of electrical demonstrations and research efforts for improvements to electrical equipment and apparatus used in energy efficient electrical systems. The incumbent will read, analyze and interpret plans, drawings, specifications and other technical information for the development and deployment of advanced smart grid technologies including Distributed Energy Resources and utility grid infrastructure technologies, micro-grids that contain some combination of DG, new power electronic system components, renewable technologies (such as photovoltaic, wind and hydro systems), energy storage technologies (such as flow batteries, ultra-capacitors, high speed flywheels, and compressed air systems) to ensure these proposed new DER systems meet or exceed identified electrical design specifications and to evaluate their performance and energy efficiency



improvements on existing electrical installations and in proposed projects. Depending on the technology being addressed, the incumbent performs one or more complex electrical engineering or engineering evaluations and/or reviews of electricity generation systems, transmission/distribution systems, communication systems or other complicated electric control systems as they relate to DER integration and utility grid infrastructure. The evaluations and reviews will also include a review and assessment of the electrical power flow and grid electrical interconnections. This will include preparing or reviewing material lists and requisitions material selection and specifications, performance and suitability of components, efficiency and economics of engineering design options, cost, and performance, and the RD&D requirements relating to the development and deployment of these technologies. The incumbent will analyze situations accurately and take an effective course of action. The incumbent will provide technical assistance to commission contract managers and other staff in analyzing the more difficult engineering problems, may direct the work of Electrical Engineers, and prepare written reports. The incumbent will evaluate electrical delivery systems (distribution or transmission) performance and energy efficiency improvements from a state-wide strategic perspective and provide RD&D planning assistance to the Energy Systems Integration Team Leader and team members. Conducts field surveys, site visits and inspections of PIER funded DER demonstrations to ensure field systems comply with electrical requirements and engineering specifications in PIER contracts that include: electrical codes, building standards, CEQA requirements, and other required general engineering codes, standards or directives. Reviews electrical, engineering and system performance data collected at DER field and laboratory demonstrations to ensure system performance meets or exceeds specific electrical, engineering and overall system performance specifications defined in PIER contracts. (E)

- 25% Planning, Specifying and Estimating. The incumbent prepares research project plans, specifies research project tasks and estimates research budgets for research projects on the smart grid electric delivery system including distributed energy resources, and signal and control systems. The incumbent will analyze and evaluate the more difficult research plans, specifications and estimates to meet various electrical codes, safety orders and regulations governing the design and installation of electrical equipment and apparatus, and other similar power installations. The incumbent will have knowledge of Electrical theory and practice as they relate to the installation of modern electrical equipment and systems onto the utility electric grid. (E)
- 15% The Incumbent will prepare funding and contract agreement documents; establish and maintain technical and business relationships with contractors, provide guidance as needed; monitor progress and identify possible changes in research direction; initiate and approve contract amendments; receive and review monthly progress reports and prepare evaluations and detailed electrical engineering assessments of the project; verify all contract terms and conditions have been met before approving invoices ; conduct independent and in-depth technical reviews and engineering specification reviews of the work conducted by the contractor; work directly with the contractor and make detailed project site inspections to ensure the project meets technical, fiscal, and administrative objectives; briefs office, division, and commission management on the status of the project. The incumbent will analyze proposals to determine how well the project addresses the scope of the solicitation criteria including, but not limited to: the extent the project will advance science or technology, address market issues and needs, meet specified target goals and objectives; the skill and experience of the project team to perform the technical tasks within the budget and schedule, the ability to move the results into the marketplace;



and the adequacy of project funding. The incumbent prepares written findings of such evaluations for use by a technical scoring committee. (E)

- 5% Consult and maintain cooperative relations with stakeholders including research organizations; state, federal and local government and utility representatives; private developers and technical experts to identify research and development opportunities of alternative and advanced energy systems or technologies in California. Define, develop and implement projects that provide significant public benefits to California and meet the policy and technical objectives of the PIER Program. (E)
- 5% Perform other duties as required consistent with the classification's specification. (M)

SIGNATURES			
I Certify That I Am Able To Perform, With Or Without The Assistance Of A Reasonable Accommodation, The Essential Job Duties Of This Position			
<div style="border-bottom: 1px solid black; margin-bottom: 5px;"></div> <div style="display: flex; justify-content: space-between;"> Employee Date </div> <div>Associate Electrical Engineer</div>	<div style="border-bottom: 1px solid black; margin-bottom: 5px;"></div> <div style="display: flex; justify-content: space-between;"> Pedro F. Gomez Date </div> <div>Energy Commission Supervisor II</div>		